

What is claimed is:

1. A decoding synchronous control apparatus for performing synchronous control for reproducing image data and voice data, coded using the MPEG format, in synchronism with each other, where the image data or voice data is assigned to first to nth channels, n being an integer of 2 or more, and the data reproduction is performed
  - 5 based on reference time data indicating a reference time at the coding side, and reproduction time data indicating a target reproduction time based on the reference time at the coding side, the apparatus comprising:
    - a selecting section for selecting each of the first to nth channels as a target channel for synchronous control in turn at predetermined intervals, and outputting the
      - 10 reference time data and the reproduction time data of the target channel;
      - a counter for counting up the time from the reference time data, output from the selecting section, in specified intervals;
      - a register for storing the reproduction time data output from the selecting section;
      - 15 a comparator for comparing a counter value of the counter and a register value of the register, so as to calculate a difference value of the values; and
      - a control section for performing synchronous control of the target channel based on the difference value calculated by the comparator and on status information for indicating the status of reproduction of the target channel, and
      - 20 wherein synchronous control of each channel is performed in time-division form.
2. A decoding synchronous control apparatus for performing synchronous control

for reproducing coded image data and voice data in synchronism with each other, where the image data or voice data is assigned to first to nth channels, n being an integer of 2 or more, and the data reproduction is performed based on reference time data indicating a

- 5 reference time at the coding side, and reproduction time data indicating a target reproduction time based on the reference time at the coding side, wherein:

synchronous control of each channel is performed in time-division form.

3. A decoding synchronous control apparatus as claimed in claim 2, further comprising:

a selecting section for selecting each of the first to nth channels as a target channel for synchronous control in turn at predetermined intervals, and outputting the  
5 reference time data and the reproduction time data of the target channel;

a counter for counting up the time from the reference time data, output from the selecting section, in specified intervals;

a register for storing the reproduction time data output from the selecting section;

- 10 a comparator for comparing a counter value of the counter and a register value of the register, so as to calculate a difference value of the values; and

a control section for performing synchronous control of the target channel based on the difference value calculated by the comparator and on status information for indicating the status of reproduction of the target channel.

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4. A decoding synchronous control apparatus as claimed in claim 3, wherein the selecting section selects any one of the first to nth channels as the target channel based on information about bit streams of the first to nth channels which include the reference

time data, reproduction time data, and coded data.

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5. A decoding synchronous control apparatus as claimed in claim 4, wherein when a discontinuity is detected in data of a bit stream, the channel corresponding to the bit stream is given priority to be selected by the selecting section as the target channel.

6. A decoding synchronous control apparatus as claimed in claim 4, wherein when an error is detected in data of a bit stream, the channel corresponding to the bit stream is given priority to be selected by the selecting section as the target channel.

7. A decoding synchronous control apparatus as claimed in claim 3, wherein among the first to nth channels, the selecting section does not select a channel, in which only one of image data or voice data is being reproduced, as the target channel.

8. A decoding synchronous control apparatus as claimed in claim 3, wherein the selection section detects the reference time data and the reproduction time data in a bit stream input into the selecting section.

9. A decoding synchronous control apparatus as claimed in any one of claims 2 to 8, wherein synchronous control is performed in any one or both of decoding control of the coded data or reproduction control of the decoded data.

10. A decoding apparatus for decoding and reproducing image data or voice data coded using the MPEG format, where the image data or voice data is included in first to nth bit streams input into the decoding apparatus, corresponding to first to nth channels,

n being an integer of 2 or more, the apparatus comprising:

5 a selecting section for:

selecting each of the first to nth channels as a target channel for synchronous control in turn at predetermined intervals, the synchronous control being performed for reproducing the image data and voice data in synchronism with each other; and

10 detecting reference time data indicating a reference time at the coding side, and reproduction time data indicating a target reproduction time based on the reference time at the coding side, in the bit stream of the target channel, and outputting the detected data;

a counter for counting up the time from the reference time data, output from the

15 selecting section, in specified intervals;

a register for storing the reproduction time data output from the selecting section;

a comparator for comparing a counter value of the counter and a register value of the register, so as to calculate a difference value of the values; and

20 a control section for performing any one or both of decoding control of the coded data or reproduction control of the decoded data of the target channel, based on the difference value calculated by the comparator and on status information for indicating the status of reproduction of the target channel, and

wherein synchronous control of each channel is performed in time-division

25 form.

11. A decoding apparatus for decoding and reproducing coded image data or voice data which is included in first to nth bit streams input into the decoding apparatus,

corresponding to first to nth channels, n being an integer of 2 or more, the decoding apparatus comprising:

- 5           a decoding synchronous control apparatus for performing synchronous control for reproducing the image data and voice data in synchronism with each other, based on reference time data and reproduction time data included in the first to nth bit streams, where the reference time data indicates a reference time at the coding side, and the reproduction time data indicates a target reproduction time based on the reference time
- 10   at the coding side, and synchronous control of each channel is performed in time-division form.

12.       A decoding apparatus as claimed in claim 11, wherein the decoding synchronous control apparatus comprises:

- a selecting section for selecting each of the first to nth channels as a target channel for synchronous control in turn at predetermined intervals, and detecting the
- 5   reference time data and the reproduction time data in the bit stream of the target channel, and outputting the detected data;

          a counter for counting up the time from the reference time data, output from the selecting section, in specified intervals;

- a register for storing the reproduction time data output from the selecting
- 10   section;

          a comparator for comparing a counter value of the counter and a register value of the register, so as to calculate a difference value of the values; and

- a control section for performing any one or both of decoding control of the coded data or reproduction control of the decoded data of the target channel, based on
- 15   the difference value calculated by the comparator and on status information for

indicating the status of reproduction of the target channel.

13. A decoding synchronous control method for performing synchronous control for reproducing image data and voice data, coded using the MPEG format, in synchronism with each other, where the image data or voice data is assigned to first to nth channels, n being an integer of 2 or more, and the data reproduction is performed  
5 based on reference time data indicating a reference time at the coding side, and reproduction time data indicating a target reproduction time based on the reference time at the coding side, the method comprising the steps of:

selecting each of the first to nth channels as a target channel for synchronous control in turn at predetermined intervals, and outputting the reference time data and the  
10 reproduction time data of the target channel;

counting up the time from the output reference time data in specified intervals;  
storing the output reproduction time data;

comparing a value obtained by the count-up operation and a value of the stored output reproduction time data, so as to calculate a difference value of the values; and

15 performing any one or both of decoding control of the coded data or reproduction control of the decoded data of the target channel, based on the difference value and on status information for indicating the status of reproduction of the target channel, and

wherein synchronous control of each channel is performed in time-division  
20 form.

14. A decoding synchronous control method for performing synchronous control for reproducing coded image data and voice data in synchronism with each other, where

the image data or voice data is assigned to first to nth channels, n being an integer of 2 or more, and the data reproduction is performed based on reference time data indicating a  
 5 reference time at the coding side, and reproduction time data indicating a target reproduction time based on the reference time at the coding side, the method comprising the step of:

performing synchronous control of each channel in time-division form.

15. A decoding synchronous control method as claimed in claim 14, wherein the step includes the steps of:

selecting each of the first to nth channels as a target channel for synchronous control in turn at predetermined intervals, and outputting the reference time data and the  
 5 reproduction time data of the target channel;

counting up the time from the output reference time data in specified intervals;  
 storing the output reproduction time data;

comparing a value obtained by the count-up operation and a value of the stored output reproduction time data, so as to calculate a difference value of the values; and

10 performing any one or both of decoding control of the coded data or reproduction control of the decoded data of the target channel based on the difference value and on status information for indicating the status of reproduction of the target channel.